Tom Bonnell
Legend Valley Products Inc./ O'Brien Manufacturing, Inc.
P.O. Box 7
Leiters Ford, Indiana 46945

Dear Tom Bonnell:

Re: Exempt Construction and Operation Status,
049-11850-00032

The application from Legend Valley Products Inc./ O'Brien Manufacturing, Inc., received on February 4, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following painting and welding operation, to be located at 7346 West County Road 400 North in Leiters Ford, Indiana, is classified as exempt from air pollution permit requirements:

(a) one weldment painting emission unit, painting metal parts,

(b) four welding stations using MIG welders.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

(2) Pursuant to 326 IAC 6-3, the particulate matter (PM) from the weldment painting emission unit shall be limited by the following

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

E = 4.1 (P)**0.67 where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

(3) Pursuant to 326 IAC 6-3, the particulate matter (PM) from the welding emission units shall be limited to 0.73 pounds per hour. This limit was determined by the following

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

E = 4.1 (P)**0.67 where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

gs
cc: File - Fulton County
Fulton County Health Department
Air Compliance - Rick Reynolds
Northern Regional Office
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for an **Exemption**

Source Background and Description

Source Name: **Legend Valley Products, Inc./O'Brien Manufacturing, Inc.**
Source Location: **7346 West County Road 400 North, Leiters Ford, Indiana 46945**
County: **Fulton**
SIC Code: **3900**
Operation Permit No.: **049-11850-00032**
Permit Reviewer: **Gurinder Saini**

The Office of Air Management (OAM) has reviewed an application from Legend Valley Products Inc. O'Brien Manufacturing, Inc. relating to the construction and operation of one painting emission unit and four welding stations.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) one weldment painting emission unit, painting metal parts.

(b) four welding stations using MIG welders.

This is the first air approval to be issued to this source.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
Paint	Painting unit	30.5	2	6000	Ambient

Enforcement Issues

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on February 4, 2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 - 3).

For the welding units, the following calculation is made to show compliance with rule 6-3. The weight rate used is 3600 lb/day added to the welding usage rate of 72 lb/day. This gives at total of 3672 lb/day, which equals 153 lb/hr.

E = (4.1)(0.0765)**0.67

E = 0.73 lb/hr

Since the actual emission rate is 0.29 lb/hr (see page 3 of Appendix A), then the welding operation complies with rule 6-3.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	2.6
PM-10	2.6
SO_2	-
VOC	2.6
CO	-
NO_x	-

HAP's	Potential To Emit (tons/year)
2 - Butoxyethanol	0.9
Methyl Ethyl Ketone	0.1
TOTAL	1.0

(a) This source has a potential to emit less than 5 tons per year of particulate matter and less than 10 tons per year of volatile organic compounds. Therefore, pursuant to 326 IAC 2-1.1-3, an exemption will be issued.

(b) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Fulton County.

Pollutant	Status (attainment, maintenance attainment, or unclassifiable; severe, moderate, or marginal nonattainment)
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Fulton County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Fulton County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	2.6
PM10	2.6
SO_2	-
VOC	2.6
CO	-
NO_x	-
Single HAP	1.0
Combination HAPs	1.0

(a) This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Fulton County and the potential to emit any pollutant is less than one hundred tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1(Major Sources of Hazardous Air Pollutants)

This rule does not apply because the potential to emit for single HAP is less than 10 tons per year and the potential to emit a combination of HAPs is less than 25 tons per year.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the weldment painting emission unit shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The particulate matter (PM) from the welding emission units shall be limited to 0.73 pounds per hour. This limit was determined by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

As noted on page 2, this operation will comply with this rule.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

This operation paints metal parts. This rule is not applicable because the potential to emit VOC emissions are less than 15 pounds per day. This is less than the applicability of rule 8-2.

Conclusion

The construction and operation of this painting unit and welding stations shall be subject to the conditions of the attached proposed Exemption 049-11850-00032.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: Legend Valley Products, Inc./O'Brian Manufacturing, Inc.
Address City IN Zip: 7346 West County Road 400 North Leiters Ford Indiana 46945
CP: 049-11850
Plt ID: 049-00032
Reviewer: Gurinder Saini
Date: 03/21/00

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Primer	10.55	64.00%	40.5%	23.5%	50.0%	33.00%	2.00000	0.050	4.96	2.48	0.25	5.95	1.09	0.83	7.51	50%
Enamel	8.83	74.00%	37.3%	36.7%	37.0%	26.00%	2.00000	0.050	5.14	3.24	0.32	7.78	1.42	0.50	12.46	50%
Degreaser	8.75	100.00%	94.3%	5.7%	94.0%	0.00%	1.00000	0.050	8.31	0.50	0.02	0.60	0.11	0.00	ERR	50%
State Potential Emissions			**Add worst case coating to all solvents**								**0.60**	**14.33**	**2.61**	**1.33**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Legend Valley Products, Inc./O'Brian Manufacturing, Inc.
Address City IN Zip: 7346 West County Road 400 North Leiters Ford Indiana 46945
CP#: 049-11850
Plt ID: 049-00032
Permit Reviewer: Gurinder Saini
Date: 03/21/00

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % 2 Butoxyethanol	Weight % Methyl Ethyl Ketone	Weight % Cobalt 2 Ethylhexanoate	2-Butoxyethanol Emissions (ton/yr)	Methyl-Ethyl-Ketone Emissions (ton/yr)	Cobalt-2-Ethylhexanoate Emissions (ton/yr)
Primer	10.55	2.000000	0.05	12.00%	0.00%	0.00%	0.55	0.00	0.00
Enamel	8.83	2.000000	0.05	10.00%	2.00%	0.10%	0.39	0.08	0.00
Degreaser	8.75	1.000000	0.05	0.00%	0.00%	0.00%	0.00	0.00	0.00
Total State Potential Emissions							**0.94**	**0.08**	**0.00**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Legend Valley Products, Inc./O'Brian Manufacturing, Inc.
Address City IN Zip: 7346 West County Road 400 North Leiters Ford Indiana 46945
CP: 049-11850
Plt ID: 049-00032
Reviewer: Gurinder Saini
Date: 03/21/00

PROCESS WELDING	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode) PM = PM10	Mn	Ni	Cr	EMISSIONS (lbs/hr) PM = PM10	Mn	Ni	Cr	HAPS (lbs/hr)
Submerged Arc												
Metal Inert Gas (MIG)(carbon steel)	4	3		0.0241	0.00034		0.0001	0.289	0.004	0.000	0.0012	0.005
Stick (E7018 electrode)												
Tungsten Inert Gas (TIG)(carbon steel)												
Oxyacetylene(carbon steel)												
EMISSION TOTALS												
Potential Emissions lbs/hr								0.29				0.01
Potential Emissions lbs/day								6.94				0.13
Potential Emissions tons/year								1.27				0.02

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.